



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

| APPLICATION NO.       | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------------|-------------|----------------------|---------------------|------------------|
| 10/670,902            | 09/25/2003  | Karen M. Braun       | A2227-US-NP         | 6024             |
| 75931                 | 7590        | 12/31/2007           | EXAMINER            |                  |
| BASCH & NICKERSON LLP |             |                      | DHINGRA, PAWANDEEP  |                  |
| 1777 PENFIELD ROAD    |             |                      | ART UNIT            | PAPER NUMBER     |
| PENFIELD, NY 14526    |             |                      | 2625                |                  |
|                       |             |                      | MAIL DATE           | DELIVERY MODE    |
|                       |             |                      | 12/31/2007          | PAPER            |

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

# Office Action Summary

Application No.

10/670,902

Applicant(s)

BRAUN, KAREN M.

Examiner

Pawandeep S. Dhingra

Art Unit

2625

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 15 October 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-17 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 September 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_.

### **DETAILED ACTION**

- This action is responsive to the following communication: Amendment after non-final rejection filed on 10/15/2007.
- Claims 1-17 are pending in the present application.

### ***Response to arguments***

Applicant's arguments, see pages 6-8, filed 10/15/2007, with respect to rejection of claims 1 & 7-16 under Newman have been fully considered but they are not persuasive.

With respect to applicant's arguments, on pages 6-8, that Newman fails to anticipate producing a target consisting of pairs of metamers, where each pair matches for one illuminant and mismatches for others and viewing the target under the illumination for which characterization is desired, as set forth by independent claim 1.

In reply, Newman discloses producing a target consisting of pairs of metamers (see S605-S607 in figure 6), where each pair matches for one illuminant and mismatches for others (see figures 4, 6, 9; paragraphs 45-59, 63-64, 67, note that pair (metamer) consists of x, y, and z values, and each pair (xyz) matches for one illuminant (e.g.  $X_{D50}$ ,  $Y_{D50}$ , and  $Z_{D50}$  are matched) and mismatches for others ( $X_{D50}Y_{D50}Z_{D50}$  pair doesn't match with  $X_A Y_A Z_A$  pair).

Newman further discloses viewing the target under the illumination for which characterization is desired (see abstract; paragraphs 2, 10, 18, 39-40, 45-65, note that regression analysis is applied to the targets to obtain a single best

fit for viewing the target (destination image) under the illumination for which characterization is desired).

Applicant's arguments, see pages 8-9, with respect to rejection of claims 2-5, 17 under Newman in view of Yamamoto and claim 6 under Newman in view of Official notice have been disregarded since Newman successfully discloses all the elements of claim 1.

### ***Drawing Objections***

Previous objections to drawings are still valid since the applicant has not responded to all the objections made to the drawings in the previous office action. Examiner has reiterated the previous objections made to the drawings which were not addressed by the applicant in the section below. Appropriate corrections to the drawings are again requested.

### ***Drawings***

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the complete features as disclosed in claims 1-17 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not

be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### ***Claim Rejections - 35 USC § 112***

Previous 112 rejections to claims are withdrawn in view of applicant's amendments to the claims.

### ***Specification***

The amendment filed 10/15/2007 is objected to under 35 U.S.C. 132(a) because it introduces new matter into the disclosure. 35 U.S.C. 132(a) states that no amendment shall introduce new matter into the disclosure of the invention. The added material which is not supported by the original disclosure is as follows:

Claim 4, recites the limitation (newly added) "grey component replacement algorithms". There is no mention of this limitation in the specification.

Applicant is required to cancel the new matter in the reply to this Office Action.

***Claim Rejections - 35 USC § 112***

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims 4-5 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Claim 4, recites the limitation (newly added) "grey component replacement algorithms". There is no mention of this limitation in the specification.

Claim 5, is dependent from claim 4, and has been rejected on the same grounds as given for claim 4 above.

***Examiner Notes***

Examiner cites particular columns and line numbers in the references as applied to the claims below for the convenience of the applicant. Although the specified citations are representative of the teachings in the art and are applied to the specific limitations within the individual claim, other passages and figures may apply as well. It is respectfully requested that, in preparing responses, the

applicant fully consider the references in entirety as potentially teaching all or part of the claimed invention, as well as the context of the passage as taught by the prior art or disclosed by the examiner

### **Claim Rejections - 35 USC § 102**

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1, and 7-16 are rejected under 35 U.S.C. 102(a) or (e) as being anticipated by Newman et al., US 2003/0020727.

Re claim 1, Newman discloses a method for improving printer characterization to more accurately reproduce desired colors on a destination printing device (see figure 1) given the ambient illumination at the location where the printer's output is intended to be viewed (see abstract; figures 1, 3; and paragraphs 1,11-15), comprising: a) producing a target consisting of pairs of metamers (see S605-S607 in figure 6), where each pair matches for one illuminant and mismatches for others (see figures 4, 6, 9; paragraphs 45-59, 63-



64, 67, note that pair (metamer) consists of x, y, and z values, and each pair (xyz) matches for one illuminant (e.g.  $X_{D50}$ ,  $Y_{D50}$ , and  $Z_{D50}$  are matched) and mismatches for others ( $X_{D50}Y_{D50}Z_{D50}$  pair doesn't match with  $X_A Y_A Z_A$  pair); b) viewing said target under the illumination for which characterization is desired (see abstract; paragraphs 2, 10, 18, 39-40, 45-65, note that regression analysis is applied to the targets to obtain a single best fit for viewing the target (destination image) under the illumination for which characterization is desired); c) selecting a best metameric pair match (i.e. best fit) from said metameric pairs, which estimates said viewing illumination (see figures 4, 6, 9; paragraphs 11-18 & 45-67); d) entering an indicator of said estimated viewing illumination (see paragraph 72); and e) adjusting the characterization data to correspond to said estimated viewing illumination (see paragraphs 65-72).

Re claim 7, Newman further discloses rendering an illumination-determination target on said a color reproduction device (i.e. printer) (see figure 1, and paragraph 59).

Re claim 8, Newman further discloses the illumination-determination target ~~for said color reproduction device~~ has been prepared in advance of characterization (see paragraph 59).

Re claim 9, Newman further discloses the illumination-determination target ~~for said color reproduction device~~ is shipped or otherwise provided with said destination printing device (see paragraph 59, note that the user can print the referenced spectral model provided with the device).



Re claim 10, Newman further discloses said indicator is entered via a Digital Front End (DFE) or print driver to the printer (see figures 10-11).

[Note: Yamamoto also discloses said indicator is entered via a Digital Front End (DFE) or print driver to the printer (see figure 8)].

Re claim 11, Newman further discloses a Graphical User Interface (GUI) for indicating said estimation of illumination (see figures 10-11).

Re claim 12, Newman further discloses each illuminant of interest represented in said illumination-determination target is a profile (see figure 10-11, and paragraphs 72-73).

Re claim 13, Newman further discloses said profile is applied as a result of the indication of illumination (see figure 10-11, and paragraphs 72-73).

Re claim 14, Newman further discloses estimated illumination is used to modify said characterization via a pre- transformation or post-transformation (see figures 6-13).

Re claim 15, Newman further discloses device values for metameric matches are derived using a cellular Neugebauer model (see paragraphs 54-57).

Re claim 16, Newman further discloses one half of each said matched metameric pairs is produced with black (K) only and the other half is produced with Cyan, Magenta, and Yellow (CMY) (see paragraphs 54-72, note that various combinations of K and CMY can be applied based on the desired illuminant

source, device type and type of analytical model used for characterizing the device).

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 2-5 and 17 are rejected under 35 U.S.C. 103 as being unpatentable over Newman et al., US 2003/0020727 in view of Yamamoto US 2002/0158933.

Re claim 2, Newman fails to further disclose that the production of the target comprises: a) choosing a base color; and b) for each illuminant of interest, determining a metamer match to said base color; and placing said base color adjacent to said metamer match to form a matched pair.

However, Yamamoto discloses the production of the target comprises: a) choosing a base color (i.e. black or K); and b) for each illuminant of interest, determining a metamer match to said base color; and placing said base color adjacent to said metamer match to form a matched pair (see paragraphs 4-11, and 60-81).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention to modify the color management system as disclosed by Newman to include the color printing techniques as taught by Yamamoto for the benefit of reducing "dependence of color appearance of gray image areas on the light source used" as taught by Yamamoto in paragraph 13.

Re claim 3, Newman fails to further disclose said metameric matched pairs are produced using different colorants.

However, Yamamoto further discloses said metameric matched pairs are produced using different colorants (see paragraphs 4-11, and 60-81).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention to modify the color management system as disclosed by Newman to include the color printing techniques as taught by Yamamoto for the benefit of reducing "dependence of color appearance of gray image areas on the light source used" as taught by Yamamoto in paragraph 13.

Re claim 4, Newman further discloses determining said metameric matched pairs comprises a re-characterization using differing grey component replacement algorithms for each illuminant of interest (see paragraphs 45-72, note that various combinations of K and CMY equations can be applied based on the desired illuminant source, and device type).

Re claim 5, Newman further disclose converting said base color to device values, CMYK, using said re-characterization (see paragraphs 45-72).

Re claim 17, Newman further discloses producing said metameric pairs comprises, for each illuminant of interest: (see figure 6): a) printing Cyan, Magenta, Yellow, and black (CMYK) sweeps (see paragraph 59); b) measuring color values of said CMYK sweeps (see paragraph 59).

Newman fails to further disclose building gray-balanced Tone Reproduction Curves (TRCs) based on said measured color values; d) inputting a value n into said gray-balanced Tone Reproduction Curves to determine CMY colorant values; and e) inputting said value n into said gray-balanced Tone Reproduction Curves to determine K colorant value.

Yamamoto discloses building gray-balanced Tone Reproduction Curves (i.e. gray-reproduction characteristics) based on said measured color values (see abstract and paragraph 66); d) inputting a value n into said gray-balanced Tone Reproduction Curves to determine CMY colorant values and e) inputting said value n into said gray-balanced Tone Reproduction Curves to determine K colorant value (see paragraphs 60-81).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention to modify the color management system as disclosed by Newman to include the color printing techniques as taught by Yamamoto for the benefit of reducing "dependence of color appearance of gray image areas on the light source used" as taught by Yamamoto in paragraph 13.

7. Claim 6 is rejected under 35 U.S.C. 103 as being unpatentable over Newman et al., US 2003/0020727 in view of Well-known art.

Re claim 6, Newman fails to further disclose that the target includes either bipartite patches, concentric patches, readability tasks, or half-and-half images.

However, Official Notice is taken to note that targets (i.e. reference color test charts) includes either bipartite patches, concentric patches, readability tasks, or half-and-half images is notoriously well known and commonly used in the art. It would have been obvious to use those target charts as a spectral model in the color management system of Newman for the benefit of enabling the user to estimate likely XYZ (i.e. color matching) values for the given color patch (see paragraphs 59 & 68).

### ***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be

calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

### ***Contact Information***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Pawandeep S. Dhingra whose telephone number is 571-270-1231. The examiner can normally be reached on M-F, 9:30-7:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Twyler Lamb can be reached on 571-272-7406. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service

Application/Control Number:  
10/670,902  
Art Unit: 2625

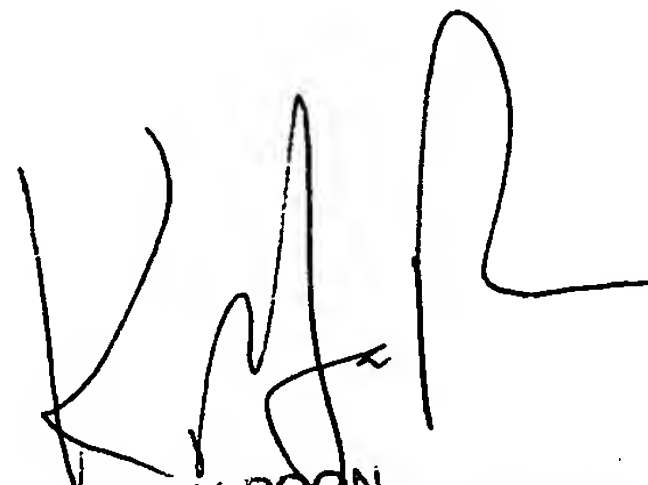
Page 14

Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Pd

Pd

December 18, 2007

A handwritten signature in black ink, appearing to read 'K. Y. POON', with a stylized flourish at the end.

KING Y. POON  
SUPERVISORY PATENT EXAMINER